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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,220	07/30/2003	Richard T. Howard	MFS-31843-1	3295
30698	7590	03/22/2005		
NASA/MARSHALL SPACE FLIGHT CENTER LSO1/OFFICE OF CHIEF COUNSEL MSFC, AL 35812			EXAMINER KALIVODA, CHRISTOPHER M	
			ART UNIT 2883	PAPER NUMBER

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/631,220		HOWARD, RICHARD T.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Christopher M. Kalivoda		2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 1 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/31/05</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed January 31, 2005 have been fully considered but they are not persuasive.

The argument put forth with respect to the originally filed claims (claims 1-14) is that Chan-Clou et al. (WO 02/33463) do not teach "an even illumination pattern" (please see Applicant's remarks, section II, second paragraph) and therefore Chan-Clou et al. do not expressly anticipate. While the Examiner agrees that "an even illumination pattern" is not specifically stated, the claim as currently amended only adds functional language and does not further define the invention structurally.

Although Chan-Clou et al. do not specifically state an "even illumination pattern", the structure as claimed is taught and the device is thus capable of having an even illumination pattern (See In re Swinehart, 169 USPQ 226 (CCPA 1971); In re Schreiber, 44 USPQ2d 1429 (Fed. Cir. 1997).

The argument put forth with respect to the two new claims indicating the fiber is a "multimode fiber" is persuasive. However, multimode fibers are conventional in the art and the two new claims are accordingly rejected below.

This office action is made final.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 01/31/2005 was considered by the examiner.

### ***Claim Objections***

Claims 1 and 15 are objected to because of the following informalities:

In claim 1, last line, the claim references "said optical pattern". However, the pattern is previously referred to as "even illumination pattern". In addition, in claim 7, next to last line, the laser light is providing the even illumination pattern whereas in claim 1, the optical pattern is providing the even illumination pattern and is confusing.

In claim 15, line 1, the claim references "said optical fiber". However, the term "fiber optic" is consistently used in the parent claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 - 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Chan-Clou et al., WO 02/33463.

Regarding independent claim 1, Chan-Clou et al. teach an optical fiber (Fig 4) for transporting a beam of light from a laser light source and projecting the beam of light towards a target in an even illumination pattern (abstract, line 1) comprising:

an input end for receiving the beam of light (Fig 4); and an exit end for projecting the beam of light towards the target (Fig 4) wherein the exit end has at least one

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diffractive optical pattern formed thereon (Fig 4-concentric circular structure at fiber's end).

The limitations of Chan-Clou et al. clearly fully meet applicant's claimed limitations.

Regarding claim 2, the diffractive optical pattern is formed by one of the group from etching, molding and cutting since the pattern is created by photo-inscription (page 5, line 15).

Regarding claim 3 and 4, the diffractive optical pattern is one of a binary or multi-level diffractive pattern and is continuous (Fig 4).

Regarding claim 5, the exit end has a plurality of optical diffractive patterns incorporated thereon (Fig 4).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan-Clou et al., WO 02/33463 in view of Tranchita et al., U.S. Patent 5,973,730.

Regarding claim 6, Chan-Chou et al. teach the limitations of claim 1 as described above.

However, the reference is silent with respect to the fiber coupled to a laser diode

at the input end.

Tranchita et al. teach a laser diode coupled to a fiber (abstract, line 1-2, col 2, lines 45-46 and Fig 1, ref sign 10).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Chan-Clou et al. and couple the fiber to a laser as taught by Tranchita et al. for the purpose of transmitting light for use in a surveillance system to deter criminal activity (col 1, lines 10-18).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan-Clou et al., WO 02/33463.

Regarding claim 16, Chan-Chou et al. teach the limitations of claim 1 as described above.

However, the reference is silent with respect to the fiber being a "multimode fiber" and uses a "single mode fiber" instead.

Multimode fibers are conventional in the art. It would have been an obvious matter of design choice to use a multimode fiber since the Applicant has not disclosed that a multimode fiber solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a multimode fiber and would have the added benefit of higher coupling efficiency with light sources because of the larger numeric apertures as well as easier adjustments because of the larger core diameters as compared to single mode fibers (please see Arie et al., U.S. Patent 5,570,442, col 1, lines 22-29).

Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tranchita et al., U.S. Patent 5,973,730 in view of Chan-Clou et al., WO 02/33463.

Regarding independent claim 7, Tranchita et al. teach a system for recording images using a camera (col 1, lines 10-13) comprising:

at least one laser emitting diode (abstract, line 1-2, col 2, lines 45-46 and Fig 1, ref sign 10);

at least one fiber optic coupled to a respective laser emitting diode at an input end thereof (Fig 1, ref sign 11).

However, the reference is silent with respect to the fiber having an exit end with a diffractive optical pattern formed thereon and wherein light emitted from the laser emitting diode travels through a respective fiber optic and is projected onto a target after having passed through the diffractive optical pattern.

Chan-Clou et al. teach fiber having an exit end with a diffractive optical pattern formed thereon (Fig 4).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Tranchita et al. to include the fibers of Chan-Clou et al. wherein light emitted from the laser emitting diode travels through a respective fiber optic and is projected onto a target after having passed through the diffractive optical pattern to illuminate a portion of the target for recording images of the target for the purpose of providing an illumination pattern which is uniform (Chan-Chou et al., abstract, lines 1-2).

Regarding claim 8, Tranchita et al. in view of Chan-Clou et al. teach the limitations of claim 7 as described above.

However, the reference is silent with respect to a rectangular illumination pattern.

Tranchita et al. disclose that the invention provides illumination where needed to support the field of view (col 3, line 48-50).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Tranchita et al. in view of Chan-Clou et al. to further include a rectangular illumination pattern for the purpose of surveilling an area that is rectangular shaped such as a doorway.

Regarding claim 9, Tranchita et al. in view of Chan-Clou et al. teach the limitations of claim 7 as described above. In addition, there is a plurality of fiber optics (Fig 1, ref sign 11).

However, the reference is silent with respect to a plurality of laser emitting diodes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of laser emitting diodes, since it has been upheld that mere duplication of the essential working parts in a device involves only routine skill in the art (St Regis Paper v Bemis Co., 193 USPQ 8.) for the purpose of providing backup light sources in case one of the light source fails.

Regarding claim 10, the fibers are arranged in a circular fashion around the camera (col 2, lines 47-49).



Regarding claim 11, the diffractive optical pattern is formed by one of the group from etching, molding and cutting since the pattern is created by photo-inscription (page 5, line 15).

Regarding claim 12 and 13, the diffractive optical pattern is one of a binary or multi-level diffractive pattern and is continuous (Fig 4).

Regarding claim 14, the exit end has a plurality of optical diffractive patterns incorporated thereon (Fig 4).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tranchita et al., U.S. Patent 5,973,730 in view of Chan-Clou et al., WO 02/33463.

Regarding claim 15, Tranchita et al. in view of Chan-Chou et al. teaches the limitations of claim 7 as described above.

However, the reference is silent with respect to the fiber being a "multimode fiber" and uses a "single mode fiber" instead.

Multimode fibers are conventional in the art. It would have been an obvious matter of design choice to use a multimode fiber since the Applicant has not disclosed that a multimode fiber solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a multimode fiber and would have the added benefit of high coupling efficiency with light sources because of larger numeric apertures as well as easier adjustments because of larger core diameters (please see Arie et al., U.S. Patent 5,570,442, col 1, lines 22-29).

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 5,719,973 to Monroe et al. describes a lens in the end of a fiber optic cable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is


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(571) 272-2476. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CMK

  
Brian Healy  
Primary Examiner